ABSTRACT

This invention includes a sprocket assembly for facilitating the derailing of the chain of a bicycle transmission and other prime movers. The first embodiment of the invention relates to a sprocket gear having at least two sprockets axially and concentrically positioned relative to one another. Each sprocket includes a non-circular configuration having at least one long radius and at least one short radius. The sprockets being axially aligned adjacent to one another such that the short radius of one sprocket is axially substantially aligned with and substantially equal in length with said long radius of an adjacent sprocket. The second embodiment of the present invention provides a sprocket assembly having two sprockets with the tooth being displaced by less than one tooth relative to each other. Thus, it is possible to vary the relationship between the teeth of the small sprocket and the chain to engage these teeth without having to vary the phase relationship between the larger and smaller sprockets. Therefore, the driving load is fully transferred to the receiving sprocket long before the chain is released from the previous sprocket. For practical purposes, this method of transferring the chain can therefore be considered as synchronous shifting.